

College of Southern Nevada's Dialysis Technician Certification Program: **First in the world** to pilot a dialysis simulation in virtual reality for use by students



First time going IN (!) Left, Gilda De Guzman, CSN Instructor with John MacLeod from XR Libraries. Right: Sue Holligan-Folds innovators from CSN's workforce and economic development team!

Over a year in the making with a fantastic team: L to R: Mark Andersen, Co-Founder and CEO of Lifelique; Kristi Klicko, Medical Education Institute (MEI), Sheila Crawford-Bunch, NCLab; John MacLeod, XRLibraries; Dori Schatell, MEI; Sue Holligan-Folds, RN, MA – CSN Division Workforce Economic Development, Allied Heath Coordinator, Tammy Westergard, MLS, Nevada State Librarian. Not Pictured: Katherine DeRosear, Nevada Career Explorer, powered by Headed2

schools + libraries

Keeping students learning and citizens earning.

Nevada Libraries Influence Linked Learning to Workforce Development with 21st Century Technology

One role of the Nevada State Library is to meaningfully link quality resources and out-of-school-time programs with formal education systems. Current priority is to serve instructors deploying industry certification and credential curricula relevant to Nevada's priority sectors and occupations. Equally important is the library's role in helping Nevadans cut the time it takes to explore career pathways and prepare for these careers.

Amplifying the workforce development ecosystem, the State library has piloted an integrated technology solution.

Four integrated tools form wrap around services to accelerate career exploration, occupational interest and classroom success for the College of Southern Nevada's (CSN) Dialysis Technician Certification Program. Each asset has been created directly with CSN instructors, the textbook publisher and industry.

Project Milestones

- SaaS career information database in all Nevada public libraries, the *Nevada Career Explorer*. In 2019 Nevada's public libraries served 9.5 million patron visits across the state's 87 branches. 44% of Nevadans have an active public library card.
- 360 video fieldtrips viewable on a virtual reality headset - *A Day in the Life of a Dialysis Technician*
- Quick assessments to check for key concept understanding are embedded within the career exploration level of the virtual reality simulation. If knowledge gaps are discovered remediation suggestions are made.
- *A first of its kind in the world* virtual reality simulation to experience the clinical workplace and some job tasks.

A research paper by Dr. Richard Lamb from the University of Buffalo published after studying science virtual reality content in his lab with first year college students concluded: *Using realistic 3D immersive environments as targeted interventions at critical times may help rebuild the current deficit in science learning.* This is important for students in STEM programs and exploring interest in STEM fields.

Library Services Platform

The library services platform leverages industry-leading solutions to manage information needs in a modern, mobile-friendly online environment. This unified resource solution simplifies and expands the information discovery experience of the job seeker, facilitates streamlined career exploration and increases cooperation between teachers, librarians and career counselors.

Study and Practice:

- Industry 4.0 **interactive learning modules are a study tool to help students focus on one small learning chunk at a time.**
 - ✓ The method presents specific topics and immediately tests student understanding as they go.
 - ✓ Students learn at their own pace, monitor their progress and learn concepts and skills in focused tutorials and quiz pairs.
 - ✓ Features include ability to revisit learning levels to review and refresh knowledge allowing students to gain practice with test-taking.
- **The virtual reality simulation** encompasses many curriculum elements, highlights demonstrate the extra corporeal circuit; infection control practices and how a dialyzer is engineered to pull toxins from blood cells. Also prominently featured and described are specialized machines, needles and instrumentation.

Career Exploration:

- **SaaS career information database** in all Nevada public libraries, the *Nevada Career Explorer*. In 2019 Nevada's public libraries served 9.5 million patron visits across the state's 87 branches. 44 percent of Nevadans have active public library cards.
- **360 video fieldtrips viewable on an Oculus Go** - *A Day in the Life of a Dialysis Technician*.
- **A virtual reality simulation** to experience the clinical workplace and some job tasks.
- **Quick assessments to check for key concept understanding** are embedded within the career exploration level of the virtual reality simulation. If knowledge gaps are discovered remediation suggestions are made.

Health Education for Patients and Caregivers:

All of the above also function as health education resources about a widespread and growing acute national health issue. According to a front page article published April 18, 2020 by the New York Times "**Due to COVID19 doctors are sounding an alarm** about an unexpected and perhaps overlooked crisis: a surge in Covid-19 patients with kidney failure that is leading to shortages of machines, supplies and staff required for emergency dialysis."

While this concept focuses on Nevada's healthcare talent pipeline to serve employer needs and Nevadans requiring dialysis services – if successful there are many additional healthcare certification programs which also may benefit from this model.

This is particularly helpful to existing business who want more education and training for employees that is not necessarily for college credit, but is practice based, off the clock and can lead to national industry recognized certifications/credentials. For employees this translates into wage growth.

Currently Nevada's minimum hourly wage is \$8.25. Students who successfully complete the 12-week dialysis technician certification program at the College of Southern Nevada leap to a starting salary of between \$15-\$18 per hour - typically with three pay grades above this starting salary.